Food and Agriculture Organization of the United Nations

What are countries doing for their forest biodiversity?

An analysis of national biodiversity strategies and action plans submitted by Parties to the Convention on Biological Diversity since the adoption of the Kunming–Montreal Global Biodiversity Framework

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Covering nearly one-third of the Earth's surface,[1] forests sustain livelihoods, produce wood and non-wood products, and regulate the carbon and water cycles. They also harbour most of terrestrial biodiversity – for example, it is estimated that forests provide habitat for 80 percent of amphibian species, 75 percent of bird species and 68 percent of mammal species; tropical forests contain about 60 percent of all vascular plant species.[2]

The Convention on Biological Diversity (CBD) emphasizes the importance of conserving biodiversity, sustainably using its components, and fairly sharing the benefits arising from the use of genetic resources.[3] The Kunming–Montreal Global Biodiversity Framework (KMGBF), which was adopted at the 15th Conference of the Parties of CBD in 2022, sets four goals and 23 targets to halt and reverse biodiversity loss by 2030.[4] Many of its targets support forest conservation, restoration and sustainable management. Although there is no specific target on forests, forest conservation, restoration and sustainable management have a critical role to play towards the achievement of most KMGBF targets.[5]

The CBD's 196 Parties have agreed to develop and implement national biodiversity strategies and action plans (NBSAPs) – that is, country-specific strategies designed to translate the KMGBF goals and targets into national action.[6] In the first half of 2025, the CBD Secretariat and FAO conducted a study to analyse these NBSAPs for the extent to which they address forest biodiversity.[i,ii] In addition, the study explored forest-related national targets submitted under the KMGBF by countries in the three major tropical forest basins of the Amazon, Congo and Borneo-Mekong-Southeast Asia, providing additional insights into forest biodiversity priorities of countries in ecologically significant regions that have not yet submitted updated NBSAPs. These national targets represent an initial step in the process of developing updated NBSAPs and signal how countries are initiating alignment with the goals and targets of the KMGBF.

The study focused on identifying three key aspects as outlined in the NBSAPs: (1) threats to forest biodiversity; (2) actions and strategies to address these threats; and (3) implementation challenges and capacity gaps (Box 1). It is important to note that the analysis of threats, actions and challenges are based on reported information by the countries and does not cover other information that might be available in the relevant literature.

This information brief presents the main findings of the analysis.

Box 1. Analysis categories

Forest biodiversity threats – specific pressures and threats to forest biodiversity, focusing on country-specific threats in forests.

Forest actions and strategies – actions described that integrate biodiversity considerations into forest management practices.

Challenges and capacity gaps – factors impeding implementation.

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[ii] This analysis was prepared under the Collaborative Partnership on Forests' Joint Initiative Kunming-Montreal Global Biodiversity Framework and the Global Forest Goals.

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Which Parties have submitted national biodiversity strategies and action plans?

The analysis covers all NBSAPs submitted between the adoption of the KMGBF and the end of June 2025. In total, 54 NBSAPs from 52 countries[7] were reviewed. Of the submitting Parties, 20 submissions are in Europe, 14 in Asia, 8 in Africa, 7 in South America, 2 in North America, 2 in Oceania and 1 in the Caribbean.

To complement the NBSAP analysis and provide a more comprehensive understanding of forest biodiversity priorities, the study also examined 129 national targets submitted under the KMGBF by major forest countries that had not yet submitted updated NBSAPs, of which 26 have been identified to be forest-related . As the national targets are an indication of ambition level for certain targets, they were analysed separately from the NBSAPs. This additional analysis included national targets from countries in the tropical forest basins of the Amazon, Congo and Borneo-Mekong-Southeast Asia.[iii]

As of the end of June 2025, no country from the Congo Basin had submitted an updated NBSAP. However, several countries from the Amazon and the Borneo-Mekong-Southeast Asia Basin had submitted NBSAPs, which were included in the main analysis of this study.

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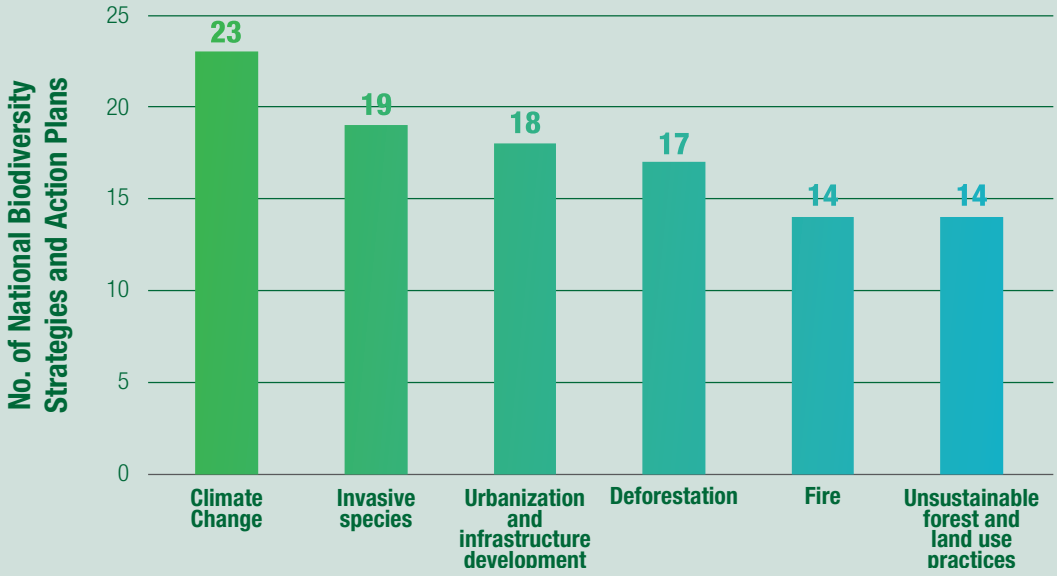
[iii] The Congo and Mekong-Southeast Asia basins are well represented through a combination of NBSAP and national target submissions, while representation from the Amazon basin remains incomplete at this stage due to data unavailability from the region.

Threats to forest biodiversity

In total, the NBSAPs identify 30 types of direct and indirect threats to forest biodiversity. The most cited is climate change, followed by invasive species. Other frequently cited threats are urbanization and infrastructure development, deforestation, fires, as well as unsustainable forest and land-use practices.

More positively, most submitting Parties consider having in place adequate policies and laws to implement NBSAPs, with only two citing weak environmental policies and enforcement as a threat to forest biodiversity. A handful of NBSAPs mention the absence of adequate management and conservation plans, and limited forest funding, as threats.

Figure 1. Most-cited threats to forest biodiversity in national biodiversity strategies and action plans (NBSAPs)



Policies, strategies and actions for forest biodiversity conservation

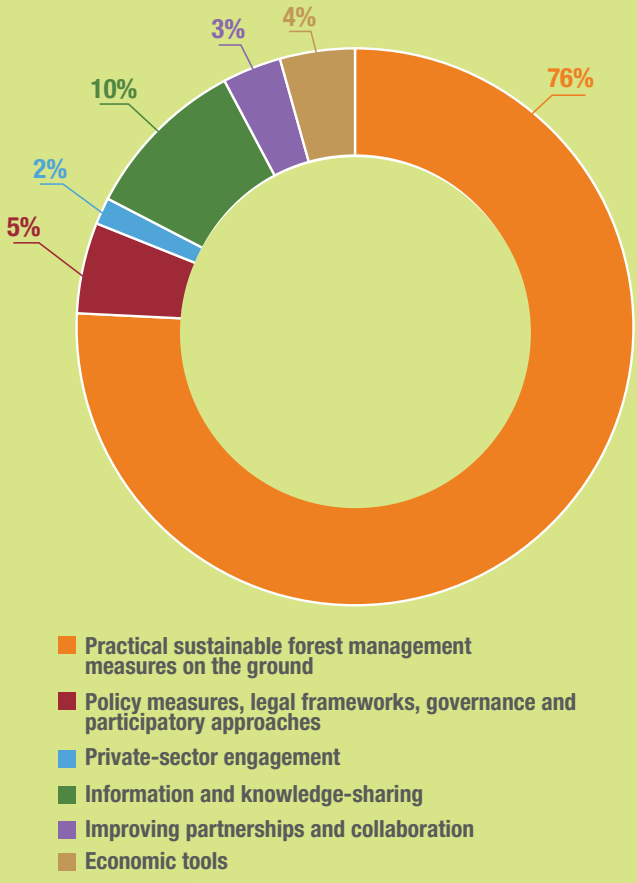
All 54 NBSAPs address forest biodiversity conservation, with a wide range of proposed actions indicated. These actions can be grouped into six categories:

1. practical sustainable forest management measures on the ground;
2. policy measures, legal frameworks, governance and participatory approaches;
3. private-sector engagement;
4. information and knowledge-sharing;
5. improving partnerships and collaboration;
6. economic tools.

The majority – 76 percent – of proposed activities, measures, tools, policies and strategies to protect and enhance forest biodiversity centre on practical activities related to the improvement of practical sustainable forest management measures on the ground. They include (in descending order by frequency of mention in NBSAPs):

- enhancement of conservation and protection;
- sustainable forestry practices;
- supporting forest establishment and expansion;
- forest composition enhancement; and
- strengthening resilience and risk management.

Figure 2. Distribution of the six categories of action in national biodiversity strategies and action plans (NBSAPs)



Sustainable forest management measures on the ground

Enhancement of forest conservation and protection

Around two-thirds of NBSAPs propose passive *in situ* measures (that is, measures within natural forest ecosystems) to protect forest ecosystems as means for conserving species and maintaining genetic diversity. A significant number indicate a focus on protecting specific forest biodiversity habitats and microhabitats, such as hollow trees, and two mention the conservation of endemic forest species. More than half the NBSAPs also outline active *in situ* conservation practices involving targeted human interventions to enhance and restore forest ecosystems. Few NBSAPs prioritize specific actions for primary forest conservation. One-quarter of the NBSAPs propose *ex situ* conservation practices (that is, measures outside natural forest ecosystems), such as nursery breeding and the establishment or maintenance of herbaria, gene banks, seed orchards and botanical gardens.

Sustainable forestry practices

Measures to advance sustainable and improved forest management indicated in NBSAPs focus primarily on promoting sustainable forest practices that align with conservation outcomes and ensure sustainable resource use. About two-thirds of the NBSAPs indicate a holistic approach to forest management, with 20 explicitly referencing sustainable forest management.

About half the NBSAPs indicate an intention to optimize resource use and prevent losses caused by unsustainable harvesting, with two mentioning circular wood usage to reduce resource competition and two others outlining plans to introduce techniques for sustainable intensification to increase biodiversity-friendly practices in forest operations.

Twelve NBSAPs emphasize national or regional forest biodiversity monitoring to inform adaptive forest management, and one mentions reducing pollution – including limiting the use of chemicals near forests – to minimize environmental harm and protect forest biodiversity.

A small number of NBSAPs mention agroforestry as a method for blending agriculture and forestry to obtain more sustainable land use, and two outline landscape approaches as means for addressing fragmentation.

Supporting forest establishment and expansion

More than one-quarter of NBSAPs refer to reforestation as a way of enhancing biodiversity and reducing pressure on current forests; of these, three indicate that natural regeneration is the preferred method. Twelve NBSAPs mention general forest-planting efforts without specifying whether these involve afforestation or reforestation; some others refer to increasing forest cover in general without providing much detail. In all these NBSAPs, there is a general emphasis on using native and site-adapted tree species to ensure that forest expansion aligns with ecological integrity.

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Forest composition enhancement

More than one-third of the NBSAPs describe efforts to enhance forest composition as a means for promoting forest naturalness. Of these, twelve prioritize native tree species in forest management and three highlight the retention of large old trees. More than one-quarter of the NBSAPs indicate an intention to enhance both vertical and horizontal forest structure, including the introduction of rare tree species (mentioned in one NBSAP) and the development of multistorey forests to improve structural complexity (four NBSAPs).

Strengthening resilience and risk management

More than one-third of NBSAPs outline resilience and risk management measures, such as preventing the introduction and establishment of invasive alien species. Wildfire mapping is another component of some NBSAPs as part of broader disaster risk reduction actions. Some NBSAPs that mention increasing forest resilience and adaptability refer to the promotion of mixed-species forests, adaptive harvesting techniques and the use of tree species that are site-adapted to future expected conditions in the context of climate change.

Policy measures, legal frameworks, governance and participatory approaches

A small number of NBSAPs explicitly mention measures to enhance national policy frameworks, including the improvement of sustainable forest management policies. Two NBSAPs propose aligning forest-use policies with biodiversity conservation, for example, through selective logging that adheres to sustainability criteria. Others mention the importance of recognizing the rights and responsibilities of local communities in forest governance; improving legal frameworks; the need to enhance legal access to forest areas for rural communities; strengthening decision-making capacities, including increasing the capacity of government agencies to conserve forest biodiversity; enhanced forest law enforcement; and certification for ensuring that forest products are legally sourced and managed in compliance with regulatory standards. A small number of NBSAPs mention the revision of forest legislation, including the formulation of new regulations to strengthen cross-sectoral efforts and improve legal frameworks for forest management.

Private-sector engagement

Few NBSAPs refer to private-sector engagement as a means for protecting and enhancing forest biodiversity. Those that do address this issue mainly mention private forest certification for ensuring that forest products meet sustainability standards.

Information- and knowledge-sharing

One-third of the 54 NBSAPs refer to advocacy, particularly promoting awareness and understanding of sustainable forest management and, to a lesser extent, of good forest conservation practices. Some NBSAPs propose the development of guidelines and best practices, such as those for sustainable forest management, and a few indicate the development of specific methodologies, including approaches to enhance forest monitoring. Seven NBSAPs reference research and knowledge development, including efforts to improve knowledge on forest pests and develop climate-change adaptation strategies for forests.

Improving partnerships and collaboration

Some NBSAPs mention plans to increase collaboration among stakeholders as a means for improving forest biodiversity conservation, including partnerships with local communities. Some also emphasize cooperation with non-governmental organizations and among government agencies to enhance collective actions, such as on forest fire management.

Economic tools

The economic tools mentioned in the NBSAPs mostly focus on scaling up incentives for forest conservation and sustainable forest management. Of these, payments for ecosystem services (PES) are the most featured, followed by Reducing Emissions from Deforestation and forest Degradation, plus the sustainable management of forests, and the conservation and enhancement of forest carbon stocks (REDD+) initiatives and the development of broader incentives schemes to encourage biodiversity-friendly forest activities.

Challenges and gaps

More than half of the 54 NBSAPs mention challenges or capacity gaps related to implementation (encompassing all ecosystems relevant to biodiversity, including forests). The identified challenges and capacity gaps can be grouped into five themes, as follows:

- **Technical capacity** – gaps related to the availability of skilled personnel, as well as access to training opportunities to build the necessary expertise for effective forest biodiversity management.
- **Lack of data** – limited availability, accessibility or applicability of data and knowledge for effective decision-making and policy implementation.
- **Lack of tools** – shortage or absence of essential tools, methodologies or technologies necessary for biodiversity monitoring and conservation efforts.
- **Financial resources** – insufficient funding to implement biodiversity strategies and forestry-related actions effectively.
- **Policy and legal framework** – weaknesses in regulatory structures and governance mechanisms affecting forest biodiversity conservation.

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Forest biodiversity priorities as outlined in national targets

In addition to analysing NBSAPs, the study reviewed national targets submitted under the KMGBF. This section is based solely on national targets, offering insights into forest biodiversity priorities in countries where updated NBSAPs are not yet available.

In the national targets, invasive species and pollution are the most frequently cited threats, followed by climate change and fragmentation. Other threats, such as land-use change, deforestation and unsustainable land-use practices, are mentioned less often. The same threats are also prominent in the NBSAPs, although reported with different frequencies.

Concrete forest-related actions are also outlined. Echoing broader trends identified across all analysed NBSAPs, most actions (67 percent) relate to the improvement of practical sustainable forest management measures on the ground. They include (in descending order by frequency of mention in national targets) forest conservation and protection; strengthening resilience and risk management; sustainable forestry practices; supporting forest establishment and expansion; and enhancing forest composition.

A smaller share of actions, 9 percent, focus on information and knowledge sharing, such as the development of biodiversity-positive forest management guidelines. An equally small share relates to policy measures, governance, and participatory approaches, particularly the recognition of local community rights. Additional actions address partnerships and collaboration, economic tools and private sector engagement, though these are less frequently mentioned.

Challenges and gaps mirror those identified in the NBSAP analysis, including limited technical capacity, lack of tools, insufficient financial resources and weak policy and legal frameworks. However, unlike in the NBSAPs, the issue of data availability is not raised.

National target submissions under the KMGBF serve as early indicators of forest-related commitments and priorities. In the analysed basin countries, coverage of KMGBF targets is uneven. Amazon basin countries show a relative emphasis on Target 10 but have not addressed several key forest-related targets (Targets 7, 12, 14, 15, 16, 18, 19, 22). In the Congo basin, Target 10 is strongly addressed, while four other targets are represented to a lesser degree (Targets 2, 3, 6, 7).

Borneo-Mekong-Southeast Asia basin countries also demonstrate a strong emphasis on Target 10 but have not addressed several other key targets (Targets 5, 12, 13, 15, 17, 18, 19, 22, 23).

Conclusion

Only about 27 percent of CBD Parties submitted updated NBSAPs – many of which vary widely in detail. Nevertheless, the analysis of the 54 submitted NBSAPs underscores the critical role of forests in national biodiversity strategies. Forests are consistently addressed across all reviewed NBSAPs, reflecting their importance for achieving a wide range of KMGBF targets. Countries report a broad array of direct and indirect threats to forest biodiversity, which are highly interconnected and context specific. These findings call for integrated, cross-sectoral and landscape-level approaches that address national circumstances rather than applying a one-size-fits-all approach. This complexity is also evident in forest-related national targets submitted by countries in key forest basins, where varying degrees of alignment with KMGBF targets and a similarly diverse set of threats and actions were observed.

Similarly, a wide range of actions to protect and enhance forest biodiversity have been proposed, which are highly country-specific, underscoring the need for tailored, context-aware conservation strategies. While already a key focus, the findings of this study suggest that sustainable forest management must be further enhanced to support effective biodiversity mainstreaming in the forestry sector. At the same time, primary forest conservation should receive greater priority to ensure the protection of the most biodiverse and ecologically valuable ecosystems. Additionally, about half of the NBSAPs report capacity gaps, particularly in financing and data availability, that pose challenges for effective implementation.

Despite these challenges and limitations, findings from NBSAPs and national targets suggest that both forest conservation and sustainable forest management remain central for meeting both KMGBF targets and broader biodiversity objectives. Strengthening the integration of forest conservation in forest production, addressing the under-prioritization of primary forests, combined with the improvement of capacity in financing and data management, will be crucial for ensuring that forests can fulfill their potential in global biodiversity protection.

Endnotes

1 FAO (2020) Global Forest Resources Assessment 2020: Main report. Rome. Download: https://www.fao.org/forest-resources-assessment/past-assessments/fra-2020/en/

2 Vi., J.-C., Hilton-Taylor, C. & Stuart, S.N. 2009. Wildlife in a changing world – An analysis of the 2008 IUCN Red List of Threatened Species. International Union for Conservation of Nature (IUCN). 184 pp.

3 https://www.cbd.int/doc/legal/cbd-en.pdf

4 https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf, p. 5

5 Secretariat of the Convention on Biological Diversity (2024) The Forest Factor. The role of protection, restoration and sustainable management of forests for the implementation of the Kunming-Montreal Global Biodiversity Framework. Download: https://www.cbd.int/forest/doc/forest-factor-en.pdf

6 Secretariat for the Convention on Biological Diversity (2011) Convention on Biological Diversity. Montreal, Canada. Download: https://www.cbd.int/doc/legal/cbd-en.pdf

7 The Kingdom of the Netherlands submitted three NBSAPS – one for Curaçao, one for Aruba and one for themselves.

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